APPENDIX D.

BOTANY.

CATALOGUE OF PLANTS COLLECTED BY THE EXPEDITION.

BY PROFESSOR JOHN TORREY.

From
Stansbury's Rept. on the
Great Salt Lake of Utah
House reprint 1853.
[Differs from Senate doc. (orig. Ed.) of 1852.
Important changes on pp. 389 & 390.]
Pagination same in both except for the
corrections — 389+390.

LIBRIS
EPH EWAN

[= C. H. Merriam copy]

APPENDIX D.

BOTANY.

BY JOHN TORREY.

CLEMATIS LIGUSTICÆFOLIA, Nutt.—East base of the Black Hills. In fruit September 29th. Tails of the carpels more than an inch long, and very slender.

ANEMONE PENNSYLVANICA, Linn.—Great Salt Lake Valley.

DELPHINIUM AZUREUM, Michx.—With the preceding. Fl. May 2d–19th.

BERBERIS (MAHONIA) AQUIFOLIUM, Pursh.—With the preceding; on the sides of the mountains. Fl. May 19th.

ARGEMONE HISPIDA, Gray, Plant. Fendl., No. 16.—With the preceding. Called the "Thistly plant" by the inhabitants. In fruit May 19th.

VIOLA PEDUNCULATA, Torr. and Gray.—Borders of the Salt Lake.

CORYDALIS AUREA, Willd.—Stansbury's Island, Great Salt Lake. Fl. June 26th.

ERYSIMUM ASPERUM, D C.—Shore of the Salt Lake and along Weber's River. May–June.

STREPTANTHUS CRASSICAULIS, Torr. (Sp. nov.): glaucus; caule glabro inflato fistuloso; foliis oblongis runcinato-pinnatifidis vel runcinatis longe petiolatis; floribus erecto-patulis; petalis (purpureis) linearibus obtusiusculis calyce villoso-lanato duplo longioribus.

Mountain side, on the east shore of the Salt Lake. Fl. May 30. Found also on the tributaries of the Uintah River, Utah Territory, by Colonel Frémont. Annual. This species is easily distinguished by its inflated hollow stem and very woolly calyx. The leaves are

mostly radical and deeply pinnatifid; the terminal lobe much larger than the others, and triangular or deltoid. The stem is simple, from one to two feet high, more or less inflated toward the base, and nearly naked above. The flowers are nearly sessile, in a long terminal raceme, erect when first expanded, but finally becoming patulous. Calyx about half an inch long, the sepals oblong-lanceolate and woolly externally. The petals are dark purple, with a pale waved margin. Filaments all free. The siliques are not known.

Plate I. *Streptanthus crassicaulis*, of the natural size. Fig. 1, a sepal, showing the inner face and part of the hairiness on the back. Fig. 2, a petal. Fig. 3, the stamens and pistil. Fig. 4, a separate stamen. All magnified.

S. SAGITTATUS, Nutt. in Jour. Acad. Nat. Sc. Philad. VII., p. 12; not Hook. and Arn.—Shore of the Salt Lake, May 6.

SISYMBRIUM CANESCENS, Nutt.—West shore of Salt Lake.

PHYSARIA DIDYMOCARPA, Gray, Pl. Illustr. I., p. 162, (in a note.) *Vesicaria didymocarpa*, Hook.—On Green River. In fruit September 12th.

CLEOME LUTEA, Hook. Fl. Bor. Amer. I., p. 70, t. 25. *C. aurea*, Nutt?—Carrington's Island, Salt Lake. Fl. June 18.

Except in the greater length of the stipe and the large size of the plant, I see nothing to distinguish *C. aurea* of Nuttall from this species.

SIDALCEA MALVÆFLORA, Gray, mss. *S. Oregana*, Gray, Pl. Fendl., p. 20. *Sida malvæflora*, Lindl. *S. Oregana*, Nutt.—Antelope Island, Salt Lake. Fl. June 18–30. A white-flowered variety occurred in the same locality.

MALVASTRUM COCCINEUM, Gray, Gen. Ill. t. 121, Pl. Fendl. p. 24. *Cristaria coccinea*, Pursh. *Sida coccinea*, D C., Torr. and Gr. Fl. 1. p. 682.

Var. β GROSSULARIÆFOLIUM. *M. grossulariæfolium*, Gray, l. c. *Sida grossulariæfolia*, Hook. and Arn.—Islands and shore of the Salt Lake. May and June.

The var. β does not differ from the ordinary form of *M. coccineum*, except in the larger size of the plant and in the less divided leaves.

CALLIRRHOE INVOLUCRATA, Gray, Gen. Ill 2, t. 117; Pl.

Ackerman Lith 379 Broadway N.Y.

STREPTANTHUS CRASSICAULIS, Torr & Frem.

Ackermann lith. 379 Broadway NY

PHACA MOLLISSIMA β. Torr

Fendl. p. 16. *Malva involucrata*, Torr. and Gr. Fl. 1, p. 226. Upper waters of the Platte. The large tapering root is said to be edible.

VICIA AMERICANA, Muhl.—Valley of Salt Lake, June 1.

CICER ARIETINUM, Linn.—Sandy bottom land in the Valley of Salt Lake; probably introduced. This plant has also been found by Dr. Pickering on the banks of the Kooskooskee, or Clear Water, in Oregon; and I have received it from Southern California, where it was doubtless taken by the Spaniards. It is a little remarkable that it should now be found apparently wild in the interior of Oregon and in the valleys of Utah.

PHACA MOLLISSIMA, Nutt. in Torr. and Gr. Fl. 1, p. 350. *Astragalus Purshii*, Dougl. in Hook. Fl. Bor.—Amer. 1, p. 152.

Var. β UTAHENSIS; foliolis. 6–8—jugis, obovatis; pedunculis folio longioribus. Shores and islands of the Salt Lake. This plant is abundant in the Territory of Utah, and I have not received it from any other region. It differs from the ordinary form of *P. mollissima:* and if there were not what appear to be intermediate states of it, I should consider it a distinct species. It is less branched, and has more numerous leaflets than the var. β. The flowers are violet, four to six in number, in a short spiked raceme. The nearly mature legume is densely clothed with long woolly cream-coloured hairs, and very closely resembles that of *P. mollissima.* Our plant has much the appearance of *Astragalus glareosus*, Dougl. (*A. argophyllus*, Dougl.,) and which, I suspect, is a *Phaca*, but the leaves and fruit are different.

Plate II. *Phaca mollissima*, var. *Utahensis* of the natural size. Fig. 1, a flower. Fig. 2, the wings and heel. Fig. 3, the stamens. Fig. 4, mature fruit of the var. α. Fig. 5, cross section of the same. Fig. 6, immature fruit of var. *Utahensis.*

ASTRAGALUS ADSURGENS, Pall.?—West shore of the Salt Lake, in sandy soil. Flowers white, shaded with purple. This plant seems intermediate between *A. adsurgens* and *A. striatus*, Nutt. The legumes were not found. May 1.

OXYTROPIS LAMBERTI, Pursh.—Upper waters of the Platte, &c.; frequent.

HEDYSARUM MACKENZII, Richards. App. Frankl. Journ. ed. 2, p. 28.—Promontory Range, Utah. Fl. May 1.

LUPINUS ALBICAULIS, Dougl.?—High grassy land, Antelope Island, Salt Lake. Fl. June 30. A suffrutescent species densely clothed with short appressed almost silvery hairs. The leaflets are mostly in sevens, oblanceolate and acute. The flowers are nearly as large as in *L. perennis*, in rather dense, somewhat verticillate spikes; and the upper lip of the calyx is strongly saccate or slightly spurred.

COWANIA STANSBURIANA, Torr. (Plate III.) C. foliis pinnatifido—5–7-lobatis, lobis oblongis; floribus flavis. *C. plicata?* Torr. in Frém. 2d Report, p. 314; not of Don. Stansbury's Island, Salt Lake. Colonel Frémont collected this plant in the mountains of California, along the Virgin River, a tributary of the Colorado. It is nearly related to *C. Mexicana*, Don, (in Linn. Trans. 14, p. 574, t. 22, f. 1,) which has also yellow flowers; but the leaves in that species are three—parted, with linear segments, and they have a long narrowly cuneate base.

A third species of this genus, *C. plicata*, Don, was introduced into England from Mexico in 1835, and is figured in Sweet's British Flower Garden, (t. 400.) This is clearly the plant afterward described and beautifully figured by Zuccarini in his Plant. Nov. v. minus cognitæ, under the name of *Cowania purpurea*. It is also *Greggia rupestris* of Engelmann, in Wislizenius's Jour.

The *C. Stansburiana* is a shrub attaining the height of from six to twelve feet. It is much branched, and the young twigs are glandular. The leaves grow mostly from short spurs. They are ovate in outline, 4–6 lines long, deeply cut into five or seven lobes, and whitish tomentose underneath, except the strong green midrib, but green and somewhat glabrous above. They are revolute on the margin, of a coriaceous texture, and sparingly dotted with conspicuous glands. The flowers are solitary, terminal, and on short peduncles. The calyx-tube is turbinate and glandular; the segments are broad and obtuse. Petals sulphur-yellow, broadly obovate, two or three times the length of the calyx-segments. Styles persistent, beautifully plumose, and in fruit an inch or more in length. Achenium linear-oblong, striate, and clothed with short appressed hairs. For further remarks on the genus Cowania, see Plantæ Fremontianæ, in the Smithsonian Contributions, vol. 6.

Plate III. *Cowania Stansburiana;* a branch of the natural size. Fig. 1, a leaf of the natural size. Fig. 2, upper surface of a leaf magnified. Fig. 3, under surface of the same. Fig. 4,

a flower-bud. Fig. 5, a flower laid open. Fig. 6, a petal. Fig. 7, plan of the flower. Fig. 8, a pistil. Fig. 9, front view of the style and stigma. Fig. 10, side view of the same. Fig. 11, a carpel of the natural size. Fig. 12, the same magnified. Fig. 13, a stamen seen in front. Fig. 14, the same seen from behind. Fig. 15, longitudinal section of a ripe carpel, showing the erect seed. Fig. 16, transverse section of the same. All the figures except No. 1 are more or less magnified.

SPIREA DUMOSA, Nutt. Mss.; Hook. Lond. Jour. Bot. 6, p. 217; Gray, Pl. Fendl. p. 40. *S. discolor*, Torr. in Ann. Lyc. N. York, 2, p. 195; not of Pursh.—Stansbury's Island, Salt Lake. Fl. June 26.

Plate IV. *Spiræa dumosa;* a branch of the natural size. Fig. 1, the fructiferous calyx. Fig. 2, a carpel. Fig. 3, the same laid open.

S. OPULIFOLIA, var. PAUCIFLORA, Torr. and Gr. Fl. 1, p. 414.—Summit of a mountain on Stansbury's Island, Salt Lake. Fl. June 26. A tall, much branched shrub, with leaves scarcely more than half an inch in diameter.

ŒNOTHERA CÆSPITOSA, Nutt.—Shore and islands of the Salt Lake. May and June. Usually acaulescent, but sometimes throwing up a branching stem about six inches high. The flower is from two to three inches in diameter, white and fragrant. *Œ. montana*, of Nuttall, is hardly distinct from this species, and perhaps *Œ. marginata* should be regarded as a variety of the same.

Œ. SCAPOIDEA, Nutt. in Torr. and Gr. Fl. 1, p. 506.—Western shore of the Salt Lake. Fl. and fr. May.

Œ. ALBICAULIS, Nutt.; Torr. and Gr. Fl. p. 495.—Islands of the Salt Lake. Fl. June. Stem about a foot high; the flowers small, white, and inodorous.

GAYOPHYTUM RAMOSISSIMUM, Torr. and Gr. Fl. 1, p. 513.—Antelope Island, Salt Lake. Stem about eighteen inches high, with very slender branches, and flowers even smaller than in Mr. Nuttall's specimen of this plant. The pedicles are about twice as long as the ripe pod.

MENTZELIA ORNATA, Torr. and Gr., and Gray, Pl. Fendl. p. 47. *Bartonia ornata*, Nutt.—Islands of the Salt Lake. In our speci-

mens there are only five petals; and the filaments of the five outermost stamens are only a little dilated, while the anthers are perfect: but in other specimens, collected by Colonel Frémont, there are ten petals, of which five inner ones are rather smaller than the others; and so they are described by Mr. Nuttall. Sir William Hooker thinks that *M. lævicaulis* is not distinct from this species; but Dr. Gray states (l. c.) that it differs in its yellow flowers, which open in the sunny hours, while in *M. ornata* they are white, and open toward sunset.

M. ALBICAULIS, Dougl.; Torr. and Gr. l. c.—Valley of the Salt Lake.

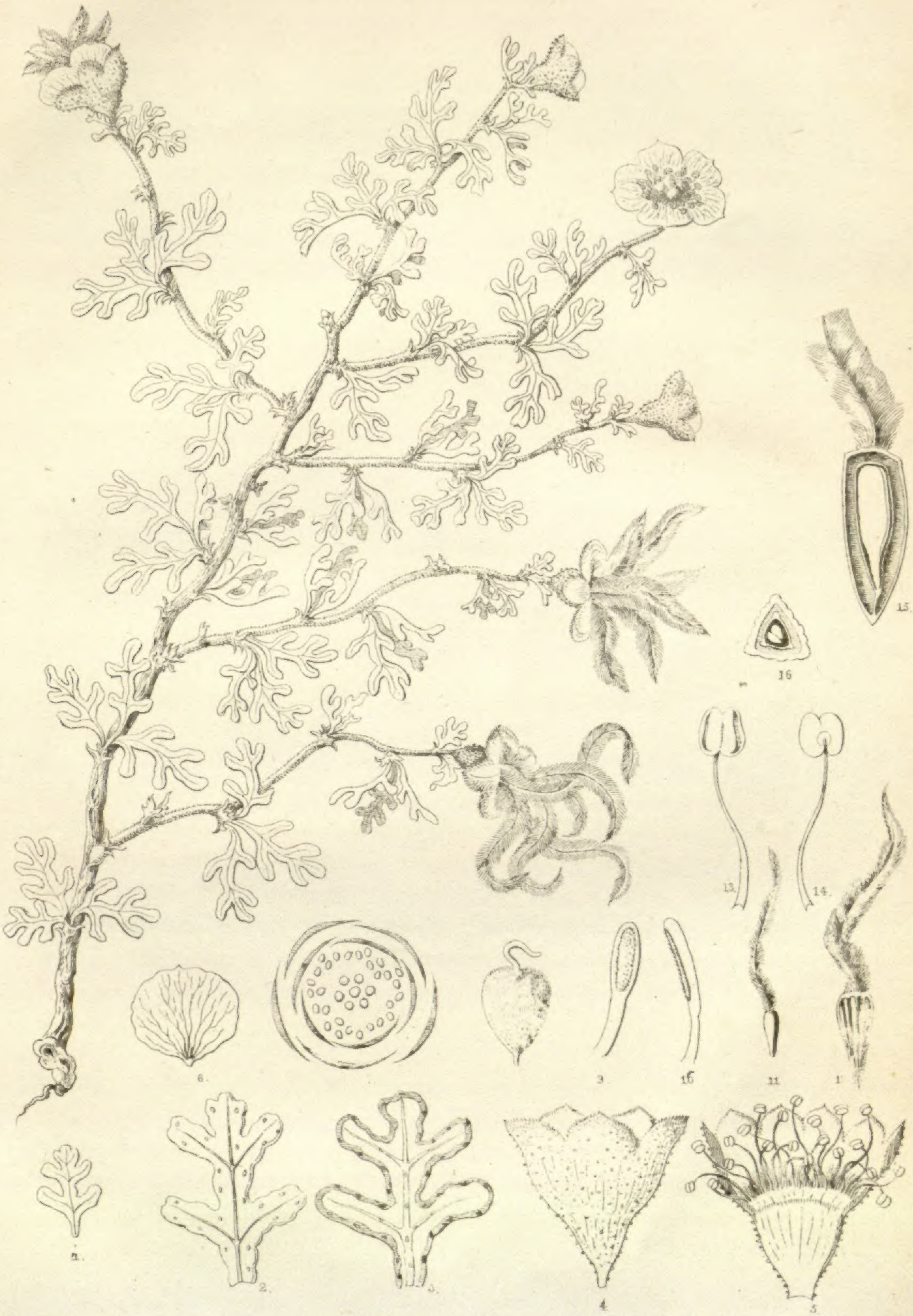
ERODIUM CICUTARIUM, L'Herit.—Islands of the Salt Lake. Fl. June. This plant is widely spread over the western part of North America, from the Rocky mountains to the Pacific, and is doubtless indigenous.

HEUCHERA RUBESCENS, Torr. (sp. nov.:) scapo nudo glabro vel scabriusculo; foliis suborbicularibus breviter 5–7-lobatis glabriusculis, lobis crenato-dentatis, dentibus setoso-mucronatis, vel obturis; panicula oblongo thyrsoidea sublaxa; staminibus exsertis; petalis linearibus calyce æquali longioribus.

Stansbury's Island, Salt Lake. Fl. June 26. Rhizoma thick and somewhat ligneous, clothed with brown vestiges of leaves. Leaves an inch or an inch and a-half in diameter, nearly orbicular, mostly cordate at the base, somewhat coriaceous, either wholly glabrous or very sparingly strigose-pubescent, moderately 5–7-lobed, and the lobes crenate, or broadly toothed. The teeth usually mucronate and sometimes ciliolate. Petioles 2–4 inches long. Scapes varying from a span to fifteen inches high, entirely naked, except a few remote appressed scales. Panicle rather loose and few (15–20) flowered. Flowers about one-third larger than in *H. Americana*. Bracts lanceolate and often toothed. Calyx purplish-red, campanulate, pubescent; the segments linear-oblong, obtuse, and nearly equal. Petals narrowly linear, persistent, about as long as the stamens. Styles much exserted.

This species has the foliage of *H. parvifolia*, the inflorescence of *H. hispida*, and the calyx of *H. Americana*.

Plate V. *Heuchera rubescens*, of the natural size. Fig. 1, a flower. Fig. 2, the same laid open. Fig. 3, transverse section of a capsule. Fig. 4, a seed. All the figures are magnified.



Ackermann Lith 378 Broadway NY

COWANIA STANSBURIANA Torr.

A. Ierardi, u Lith. 379 Broadway

PEUCEDANUM BITERNATUM, (var. ? PLATYCARPUM.)—Fructibus obovatis, alis membranaceis disci sesquilatioribus.—With the preceding. Except in the broadly-winged fruit, this plant does not appear to differ essentially from *P. biternatum*, Nutt.

THASPIUM MONTANUM, Gray, Fl. Fendl. p. 57? On a mountain bordering the Salt Lake. Fl. May 25. One specimen has a perennial root, crowned with several spreading scapiform stems, which are (in the flowering state) from five to eight inches long. The whole plant is very glabrous and somewhat glaucous. The leaves are bi-tripinnatifidly cut, with oblong, acute, entire, or incised lobes. The yellow flowers are in dense umbels, with numerous rays. There is no involucre, and the involucels consist of 7–9 linear-lanceolate leaflets. The carpels of the young fruit are furnished with five broad, undulate wings. The vittæ in the intervals seem to be solitary, or sometimes double.

ASTER OBLONGIFOLIUS, Nutt.—Stansbury's Island, Salt Lake, June 26.

ERIGERON CONCINNUM, Torr. and Gray, Fl. 2, p. 174.—Valley of Salt Lake, May 30.

DIETERIA PULVERULENTA, Nutt. in Torr. and Gray, Fl. 2, p. 101.—Green River, Sept. 12.

SOLIDAGO MISSOURIENSIS, Nutt.—With the preceding.

LINOSYRIS VISCIDIFLORA, Torr. and Gray, Fl. 2, p. 234—var. SERRULATA; ramulis scabriusculis; foliis anguste linearibus trinervibus rigidiusculis acutis, margine serrulato-scabris; capitulis fastigiato-corymbosis subquinquefloris; squamis oblongo-lanceolatis glabris subquinquefariam imbricatis laxiusculis, exterioribus multo brevioribus, corollis glabris.—Valley of the Salt Lake.

GRINDELIA SQUARROSA, Dunal.—Bear River, near the Hot and Cold Springs. Fl. May 10.

STENOTUS CÆSPITOSUS, Nutt. in Torr. and Gray, Fl. 2, p. 238.—Valley of the Salt Lake.

AMBROSIA CORONOPIFOLIA, Torr. and Gray, Fl. 2, p. 291.—Table land at the northern extremity of Salt Lake Valley, Sept. 19.

LAPHAMIA STANSBURII, Gray, Plant. Wright, 1, p. 101 and 129. *Monothrix Stansburiana*, Torr. in Stansb. Rep. ed. 1, p. 390.—

Crevices of limestone rocks on Stansbury's Island, Salt Lake. Fl. June 26.*

The lower part of the stem is thick and ligneous, but the branches are herbaceous. These are about a span high, and are minutely glandular-pubescent. The leaves are scarcely half an inch in diameter, broadly ovate, or almost orbicular in outline, often subcordate at the base, with a few coarse, obtuse teeth, or almost lobed; the lower ones mostly opposite, but the upper ones often alternate. Heads 6–8 lines in diameter. Scales of the involucre in two or three series lanceolate, acute, glandularly puberulous, somewhat villous at the tip. Rays 6–10; the limb longer than the tube, and nearly twice as long as the involucral scales. Disk—flowers constantly 4-toothed in all my specimens. Achenium obovate-oblong, compressed, slightly hispid-ciliate on the margin, crowned with a single rigid, upwardly scabrous bristle.

This genus is nearly related to *Perityle* of Bentham, (Bot. Sulph. p. 23,) but differs in the absence of squamellæ on the achenium, and in other characters.

Plate VI. *Laphamia Stansburii*, (*Monothrix Stansburiana*,) of the natural size. Fig. 1, a leaf. Fig. 2, a head of flowers. Fig. 3, an involucrum laid open, the flowers removed to show the receptacle. Fig. 4, the same divided longitudinally. Fig. 5, an inner and an outer scale of the involucrum. Fig. 6, a ray flower. Fig. 7, a disk flower. Fig. 8, corolla of the disk flower laid open. Fig. 9, branches of the style and their appendages.

CHENACTIS STEVIOIDES, Hook. and Arn.; Torr. and Gray, Fl. 2, p. 371.—Strong's Knob, Salt Lake, June 10. Several of the ray flowers have the corolla dilated, but the lobes still nearly equal, and, as is the pappus, considerably shorter than in the disk flowers.

C. Tenuifolia of Nutt. is scarcely distinct from this species.

C. ACHILLEÆFOLIA, Hook. and Arn.; Torr. and Gray, Fl. l. c.—Stansbury's Island, June 20. Stems about a span high, several

*The Laphamia of Dr. Gray, although published subsequently to Monothrix, must take precedence of that genus, as it now embraces one species with a pappus of many bristles, another with a bisetose pappus, and two other species that are quite destitute of a pappus; so that the latter name is no longer appropriate.

from one root. Leaves somewhat fleshy, densely clothed with a white tomentum; the lobes very small, obtuse, and much crowded. Heads few (3–6) in a terminal corymb. Flowers of the ray and disk nearly alike, funnel-form. Pappus of about ten oblong, obtuse, denticulate scales; five of which, in the disk flowers, are nearly as long as the tube of the corolla, and the five other about half as long. Scales in the ray flowers much shorter than the corolla tube.

Plate VII. *Chenactis achilleæfolia*, of the natural size. Fig. 1, a head of flowers. Fig. 2, an exterior scale of the involucrum. Fig. 3, an interior scale of the same. Fig. 4, a disk flower. Fig. 5, cross section of an achenium. Fig. 6, a ray flower. Fig. 7, branches of the style and appendages. Fig. 8 and 9, scales of the pappus from a disk flower.

Layia Glandulosa, Hook. and Arn.; Torr. and Gray, Fl. 2, p. 394.—Valley of the Salt Lake, east side.

Achillea Millefolium, Linn.—Islands of the Salt Lake, June.

Artemisia tridentata, Nutt. in Trans. Amer. Phil. Soc. (n. ser.) 7, p. 398.—Green River, Sept. 12. Many of the larger species of the genus are called "Sage" by the hunters and emigrants.

A. frigida, Willd.; Torr. and Gray, Fl. 2, p. 424.—With the preceding.

A. Ludoviciana, Nutt., Gen. 2, p. 143.—With the preceding.

A. Canadensis, Mich., Fl. 2, p. 129.—With the preceding.

Senecio filifolius, Nutt. in Trans. Amer. Phil. Soc. (n. ser.) 7, p. 414.—Green River, September.

S. hidrophilus, Nutt. l. c.—Valley of the Salt Lake.

S. Hookeri, Torr. and Gray, Fl. 2, p. 438.—Weber River, May 16. Scales of the involucre with black villous tips.

Tetradymia Nuttallii, Torr. and Gray. *T. spinosa*, Nutt., l. c.—Shore of the Salt Lake, May 5. A thorny shrub, about four feet high.

Cirsium undulatum, Spreng.—Stansbury's Island, Salt Lake. Fl. June 24.

Stephanomeria runcinata, Nutt. in Trans. Amer. Phil. Soc. 7, p. 427.—Carrington's Island, Salt Lake.

LYGODESMIA JUNCEA, Don; Hook., Fl. Bor. Amer. 1, p. 295.—Stansbury's Island, Salt Lake, June 23. The heads in our specimens are quite as large as in *L. grandiflora*. Captain Stansbury states that the flowers are purple.

MALACOTHRIX SONCHOIDES, Torr. and Gray, Fl. 2, p. 486.—Shore of the Salt Lake, and on Carrington's Island, May 30. The pappus is decidedly double in this species. The outer series consists of five slender, nearly glabrous, and somewhat persistent bristles; the inner of about fifteen scabrous capillary bristles, which are caducous, and separate in a ring. I have seen the same character in two or three other species. Dr. Gray, in his *Plantæ Fendlerianæ*, (p. 113, No. 453,) says that he noticed in "*M. sonchoides*, *M. Coulteri*, and especially in *M. Californica*, that two (opposite) bristles of the pappus are naked, instead of barbellate, and rather stronger and less desiduous than the others." In *M. sonchoides* I believe the outer series always consists of *five* bristles; but in some species they are variable in number, and in others are entirely wanting.

CREPIS ACUMINATA, Nutt. l. c.; Torr. and Gray, Fl. 2, 489.—Stansbury's Island, Salt Lake, June 23. This is the tallest of our indigenous species of Crepis. Some of our specimens are about three feet high. The radical leaves (including the petioles) are more than a foot in length.

Plate VIII. *Crepis acuminata*, of the natural size. Fig. 1, a separate flower magnified, as are the following. Fig. 2, an achenium with its pappus. Fig. 3, one of the hairs of the pappus.

TROXIMON CUSPIDATUM, Pursh, Fl. 2, p. 742.—Valley of the Salt Lake.

CASTILLEJA HISPIDA, Benth. in Hook. Fl. Bor. Amer. 2, p. 105.—Shore of the Salt Lake, May.

C. MINIATA, Dougl. in Hook. Fl. Bor. Amer. l. c.—With the preceding.

C. SESSILIFLORA, Pursh, Fl. 2, p. 738.—Weber River.

PENTSTEMON GRANDIFLORUM, Nutt. in Fras. Catal., 1813.—On the Arkansas River.

ERITRICHIUM GLOMERATUM, D C. Prodr. 10, p. 131. *Myosotis glomerata*, Nutt.—Near Salt Lake City. Fl. April 29.

ECHINOSPERMUM FLORIBUNDUM, Lehm.; Hook. Fl. Bor. Amer. 2, p. 84.—Valley of the Malade, Sept. 25. Near *E. deflexum*.

AMSINCKIA LYCOPSOIDES, Lehm.; D C. Prodr. 10, p. 117.—Shore of the Salt Lake. Fl. May 5th.

MERTENSIA DRUMMONDII, G. Don; D C. Prodr. 10, p. 86.—Salt Lake Valley.

LITHOSPERMUM? CIRCUMSCISSUM, Hook. and Arn., Bot. Beech. Voy., suppl. p. 370.—On Green River. In my account of the plants collected in California and Oregon by the United States Exploring Expedition, I have made this plant the type of a new genus, (*Piptocalyx*,) allied to Eritrichium, from which it differs in its naked corolla and deciduous calyx.

HYDROPHYLLUM CAPITATUM, Dougl.; Benth. Trans. Lin. Soc. 17, p. 273.—Ogden's Pass, May 15.

EUTOCA HETEROPHYLLA, Torr. (n. sp.:) erecta scabro-pubescens; foliis oblongo-linearibus subsessilibus integris vel ad basin utrinque unilobatis, lobis oblongis v. linearibus; floribus brevi-pedicellatis; lobis calycinis spathulato-linearibus obtusiusculis; corolla patenti-campanulatâ calyce sesquilongiore; placentis multiovulatis.—Valley of the Salt Lake, on the eastern side.

Annual; about a foot high. Radical leaves spatulate; the cauline ones broadly linear, 1–1½ inch long; either entire or furnished on each side at the base (sometimes only on one side) with a spreading, narrow, acute lobe, so that the leaves appear somewhat halberd-form. Racemes short, terminating the branches. Lobes of the calyx about three and a-half lines long, Corolla widely campanulate, almost rotate, about five lines long; the lobes short and rounded. Appendages ten, narrow, connivant in pairs between the bases of the filaments. Stames nearly equal, a little shorter than the corolla. Style somewhat exserted; 2-lobed at the summit. Ovary with 15–20 ovules attached to each placenta. This species resembles *E. phacelioides*, Benth., but differs in the nearly sessile narrower leaves; the larger and broadly campanulate corolla, many-ovuled placentæ, &c.

GILIA (IPOMOPSIS) PULCHELLA, Dougl. in Hook. Fl. Bor. Amer. 2, p. 74.—Ogden Pass, May 15.

COLLOMIA LINEARIS, Nutt. Gen. Amer. pl. 1, p. 126.—With the preceding.

PHLOX HOODII, Richards. in Frankl. Jour. app. ed. 2, p. 6, t. 28. —Mountains near the Salt Lake, April and May.

P. LONGIFOLIA, Nutt. Jour. Acad. Philad. 7, p. 41.—North-west shore of the Salt Lake, and near the mouth of Bear River, May 10.

PHYSALIS LANCEOLATA, Mich.—Salt Lake Valley, June.

GENTIANA AFFINIS, Griseb. Gent. p. 289.—Moist places, Aug. 18.

ACERATES DECUMBENS, Decaisne in D C. Prod. 8, p. 522. *Anantherix decumbens*, Nutt.—Mountain on Stansbury's Island, Salt Lake, June 26. Stems often assurgent. Calyx and corolla green. Crown dark purple.

COMANDRA UMBELLATA, Nutt. Gen. 1, p. 157; Hook. Fl. Bor. Amer. 2, p. 139 t. 179.—Stansbury's Island, Salt Lake. Fr. June 20.

RUMEX VENOSUS, Pursh, Fl. 2, p.? Green River. Fr. September 12.

ERIGONUM UMBELLATUM, Torr. in Ann. Lyc. Nat. Hist. New York, 2, p. 241.—Valley of the Salt Lake.

E. FREMONTII, Torr.—With the preceding.

SARCOBATUS VERMICULARIS, Torr. in Emory's Report, p. 149. *S. Maximiliani*, Nees. *Fremontia vermicularis*, Torr. in Frémont's first and second Reports. "Pulpy Thorn" of Lewis and Clark's travels.—Strong's Knob, Salt Lake, Fl. June 10.

GRAYIA POLYGONOIDES, Hook. and Arn. Bot. Beech. Voy. suppl. p. 338, Hook. Ic., 271. *G. spinosa*, Moq. in D C. Prodr. 11, p. 110.—Carrington's Island, Salt Lake.

CHENOPODINA LINEARIS, Moq. in D C. Prodr. 11, p. 164, excl. syn. Ell. and Michx.—Mountain on the west shore of the Salt Lake. Fl. May 30. This plant attains the height of about three feet. The lower part of the stem is stout and shrubby. It differs entirely from the *C. maritima* of the Atlantic States; yet the authors who describe it as *not* shrubby are quoted by Moquin under *C. linearis*.

ARTHROCNEMUM FRUTICOSUM, Moq. Chenop. Enum. p. 111, and in D C. Prodr. 11, p. 151?—North shore of the Salt Lake. A common plant in all the salines of New Mexico and California. It is a shrub about one foot high, and much branched. The joints of the branches are more or less compressed, and emarginately

CREPIS ACUMINATA, Nutt

bifid at the summit. The spikes are cylindrical and are not jointed; the flowers being alternate, and immersed in deep excavations of the rachis. The calyx is quadrangular, and consists of four cohering sepals, which are cucullate, spongy at the summit, and at length separate from each other. There is but a solitary stamen. The seed is loose in the utricle, oblong, and the embryo forms about half of an ellipse.

OBIONE CANESCENS, Moq. Chenop. p. 74, and *O. occidentalis*, Moq. in D C. Prodr. 11, p. 112. *Pterochiton occidentale*, Torr. and Frém., in Frém. second Rep. p. 318. *Obione tetraptera*, Benth. Bot. Voy. Sulph. p. 48.—On Green River. Fr. September 10. This is a variable species, especially in the characters of the mature fructiferous calyx. Sometimes it is furnished with short, irregular-toothed wings, and at other times the wings are very broad and nearly entire.

O. CONFERTIFLORA, Torr. and Frém. l. c.—With the preceding.

ABRONIA MELLIFERA, Doug. Mss. Hook. Fl. Bor. Amer. p. 2, 125, Bot. Mag. l. 2879.—Strong's Knob, Salt Lake. Fl. June 10. Easily distinguished from *A. umbellata* by its broad involucral leaves and green flowers. In Frémont's first Report, p. 96, and in Emory's Report, p. 149, I noticed a peculiarity of the embryo; the inner cotyledon being constantly abortive. The same character exists in all the species of this genus: but I have not observed it in any other nyctagineous plant.

SHEPHERDIA ARGENTEA, Nutt. Gen. Amer. Pl. 2.—Black's Fork of the Green River. Fr. September 12.

EPHEDRA AMERICANA, Willd. Spec. Pl. 4, p. 860? Endl. Synops. Conif. p. 254.—Shore of the Salt Lake. A leafless shrub with very numerous branches, growing about four feet high. It is very doubtful whether it be the same as Willdenow's plant, which is a native of Quito. Although it is not uncommon in the interior of California and in New Mexico, I have never received the female flower or the fruit. All my specimens are males. *E. Americana* is described as monœcious. The *Ephedra* noticed in Emory's Report under the name of *E. occidentalis*, (a mistake for *E. Americana*,) differs from this species in its three-parted sheaths with long subulate points.

TRIGLOCHIN MARITIMUM, Linn.—Pursh, Fl. 1, p. 257.—Stansbury's Island, Salt Lake, June 24.

POLYGONATUM CANALICULATUM, Pursh, Fl. 1, p. 235.—Valley of the Salt Lake?

AMIANTHIUM NUTTALLII, Gray, Melanth. in Ann. Lyc. Nat. Hist. N. York, IV., p. 123. *Helonias angustifolia* and *H. paniculata*, Nutt.—Valley of the Salt Lake. Fl. May 1.

AMBLIRION, Rafin. in Journ. de Phys. 89, p. 102; Bernhardi, Bot. Zeit. 1835, p. 395? (ex Kth. Enum. 4, p. 255.) *Lilium* § *Amblirion*, Endl. gen. sub No. 1098. *Fritillaria* § *Eucrinum*, Nutt.

A. PUDICUM, var. BIFLORUM, Torr. *Lilium pudicum*, Pursh, Fl. 1, p. 228, f. 1.; Schult. Syst. 7, p. 401. *Fritillaria pudica*, Spreng. Syst. 2, p. 64; Nutt. in Journ. Acad. Phil. 7, p. 54. Hook. Fl. Bor. Amer. 2, p. 182; Kunth Enum. l. c.—Promontory Range, Valley of Salt Lake. Fl. April 12.

This rare and interesting plant was long ago proposed as a distinct genus by the late Mr. Rafinesque. It is allied both to *Fritillaria* and to *Lilium*. It differs from both in the want of nectaries. Unfortunately the fruit is not known, so that it cannot be compared with those genera in an important character. Our specimens are all two-flowered. The root is flat, orbicular, and toothed round the border, with a cluster of little tubers on the upper side at the base of the stem. The leaves are linear, and from two to four inches long. The flowers are yellow, nodding, about an inch in length, somewhat obconical, or funnel-form, and entirely destitute of a nectariferous groove. The stigma is simple and undivided.

According to Mr. Nuttall, *Fritillaria tulipæfolia* of Caucasus is another species of this genus. I have also specimens of what may prove to be a third species, collected by Colonel Frémont on the Feather River, California; for the style, though thickened at the summit, is undivided, and the nectary is wanting: but there are several flowers in a loose racemose panicle.

Plate IX. *Amblirion pudicum*, of the natural size. Fig. 1, a sepal magnified, as are all the following. Fig. 2, a stamen showing the back of the anther. Fig. 3, a front view of the same. Fig. 4, the pistil. Fig. 5, a cross section of the ovary.

Ackerman Lith. 370 Broadway, NY

AMBLIRION PUDICUM.

ALLIUM STELLATUM, Fraser, Bot. Mag. t. 1576.—Weber River, May 23.

A. RETICULATUM, Fraser, Bot. Mag. t. 1840.—Wahsatch Mountains, June.

CALOCHORTUS LUTEUS, Nutt. in Jour. Acad. Phil. 7, p. 53; probably not of Douglass.—Valley of Salt Lake. The root is called "sego" by the natives, and is much esteemed by them as food. It is bulbous, and varies in size from that of a pea to that of a filbert. Our plant agrees exactly with the description of Nuttall, who was probably mistaken as to the colour of the flower. The inner sepals seem to be *white*, except at the claw, which is yellow. I have not been able to institute a comparison between this plant and Douglass's *C. luteus;* but if ours proves to be distinct, it may be called *C. Nuttallii.*

ERYTHRONIUM GRANDIFLORUM, Pursh, Fl. 1, p. 231. Lindl. Bot. Reg. t. 1786.—With the preceding.

TRITELEIA GRANDIFLORA, Lindl. Bot. Reg. fol. 1293. Hook. Fl. Bor. Am. 2, p. 186, t. 198, B.—Valley of Salt Lake. Fl. May.

JUNCUS BALTICUS, Willd.; Hook. Fl. Bor.—Amer. 2, p. 189.—Antelope Island, Salt Lake, June 1.

SISYRINCHIUM BERMUDIANA, Linn. *S. anceps,* Cavan.—Walnut Creek.

HYPOXIS ERECTA, Linn.—Upper Arkansas.

SCIRPUS TORREYI? Olney.—Gray, Bot. N. States, p. 526?—Stansbury's Island, Salt Lake. Fr. June 26.

Differs from *S. Torreyi* in its longer and larger spikes, and in shorter point of the achenium; but in other respects it agrees.

ERIOCOMA CUSPIDATA, Nutt. Gen. 1, p. 40.—Antelope Island, Salt Lake, June 18. A beautiful grass, which seems to be distinct from *Stipa.*

KOELERIA CRISTATA, Pers.—Gray, Gram. and Cyp. 1, No. 45.—With the preceding.

HORDEUM JUBATUM, Linn.—Torr. Fl. 1, p. 158.—Antelope Island, Salt Lake, June.

AGROPYRUM REPENS, Gaert.—With the preceding.

ELYMUS STRIATUS, Willd.—With the preceding.